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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,444	11/25/2003	Floyd D. Simpson	CE11066JI121 (79068)	7126

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EXAMINER	
LAM, DUNG LE	
ART UNIT	**PAPER NUMBER**
2617	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/26/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/721,444	SIMPSON ET AL.	
	Examiner	Art Unit	
	Dung Lam	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *05 October 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22,24 and 25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22,24-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/8/06 has been entered.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims **1-5, 8-10, 16-19, 20, 17-19 and 21** are rejected under 35 U.S.C. 102(e) as being anticipated by ***Liu et al*** (US Pub. No. 2004/0190467).

3. Regarding **claim 1**, **Liu** teaches a method for use by a subscriber unit to select a time to receive a transmission from a wireless local area network access point using a shared wireless communication resource (Abstract), comprising:

receiving a beacon transmission from the access point comprising first information that corresponds to times when other subscriber units are proposing to

utilize the shared wireless communication resource (The AP uses CC/RR protocols to poll and collect utilizations times from subscribers in order to construct a SIV, "schedule information vector", to be sent to the subscribers. Since the SIV is constructed based on polling and interactions with the subscribers, it broadly reads on as "utilization times proposed by the other subscribers", para. 26, 28, 71, 76-78, 81-83);

using the first information to select a particular time to receive data from the access point using the shared wireless communication resource (para. 27, 84, 94, 99-100).

4. Regarding **claim 8**, **Liu** teaches a method for use by a wireless local area network access point to facilitate reception of transmissions from the access point by subscriber units using a shared wireless communication resource (Abstract), comprising: receiving transmissions from a plurality of subscriber units, wherein the transmissions include information that identifies proposed times when each of the plurality of subscriber units proposes to utilize the shared wireless communication resource (station may adjust its expected time for data reception para. 94) including schedule information that corresponds to at least a part of the information in a beacon transmission to the subscriber units (para. 26 and 28), such that at least one of the subscriber units can utilize the schedule information to schedule a sleep mode of operation that is consistent with data reception at a selected particular time (para. 82, 84 and 87).

5. Regarding **claim 16**, **Liu** teaches a method for permitting subscriber units using a shared wireless communication resource to utilize a wireless local area network access point (Abstract), comprising: at various of the subscriber units: transmitting to the access point information that corresponds to proposed transmission times for at least some of the various of the subscriber units (para. 26 and 28); at the access point: using the information to form a message (para. 13, beacon frame); transmitting the message in a beacon transmission to the subscriber units; at least one of the subscriber units: receiving the beacon transmission; using the message to select a first particular time (para. 84 and 87) at which to shift from a sleep mode of operation to an active mode of operation (para. 26, schedules of wake up time).

6. Regarding **claim 2**, **Liu** teaches all the limitations in claim 1. Liu further teaches that the step of receiving a beacon transmission occurs at a scheduled time (para. 26).

7. Regarding **claim 3**, **Liu** teaches all the limitations in claim 2. Liu further teaches that receiving the beacon transmission at a scheduled time further comprises altering a subscriber unit's operating mode from a sleep mode of operation to an active reception mode of operation (para. 26, schedules of wake up time).

8. Regarding **claim 4**, **Liu** teaches all the limitations in claim 1. Liu further teaches the step of using the first information to select a particular time to wake up to receive data (para. 22).

9. Regarding **claims 5 and 20**, **Liu** teaches all the limitations in claim 1 and 16 respectively. Liu further teaches the shared wireless communication resource comprises an 802.11 compliant shared wireless communication resource (para. 26).

10. Regarding **claim 9**, **Liu** teaches all the limitations in claim 8. Liu further teaches the step of receiving transmissions from a plurality of subscriber units comprises receiving the transmissions during a contention portion of a beacon interval (para. 47).

11. Regarding **claim 10**, **Liu** teaches all the limitations in claim 8. Liu further teaches the step of including schedule information that corresponds to at least a part of the information in a beacon transmission to the subscriber units comprises identifying specific times when each of the plurality of subscriber units has proposed to make a transmission (station may adjust its expected time for data reception para. 94).

12. Regarding **claim 17**, Liu teaches all the limitations of claim 16. He further teaches the step of using the message to select a first particular time at which to shift from a sleep mode of operation to an active mode of operation comprises a subscriber unit that did not propose a transmission time to the access point using the message to select a first particular time at which to shift from a sleep mode of operation to an active mode of operation (para. 26, schedules of wake up time).

13. Regarding **claim 18**, Liu teaches all the limitations of claim 16. He further teaches the step of using the message to select a first particular time at which to shift from a sleep mode of operation to an active mode of operation of a subscriber unit that

did propose a transmission time to the access point using the message to select a first particular time that is different from any of the proposed transmission times (para. 94).

14. Regarding **claim 19**, Liu teaches all the limitations of claim 16. He further teaches the step of transmitting to the access point information that corresponds to proposed transmission times comprises transmitting to the access point during a beacon interval (para. 26 and 28).

15. Regarding **claim 21,** Liu teaches all the limitations as in claim 16. He further teaches the step using the information to form a message that includes all of the proposed access times from each of the subscriber units (para. 27 and 28).

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

17. Claim **22** is rejected under 35 U.S.C. 103(a) as unpatentable by ***van bokhorst et al*** (US Patent. No. 6192230) in view of ***Liu et al*** (US Pub. No. 2004/0190467).

18. Regarding **claim 22**, **vanBokhorst** teaches a subscriber unit for use with a wireless local area network access point using a shared wireless communication resource, (Abstract, Col. 7, 8 and 9, Fig. 9 and 10) comprising: a shared wireless

communication resource compatible transceiver (wireless transceiver 230, Fig. 9); a controller (processor 234 Fig. 9) having at least an active mode (full-power period FP, Fig. 10) of operation and a sleep mode (low-power period LP, Fig. 10) of operation and being operably coupled to the transceiver (230, Fig. 9); a memory (236 and 248, Fig. 9) operably coupled to the controller having, at least from time to time, stored therein (message buffer to store messages, Psync timer, receive holdover time, Col 7 lines 25 Col 8 L35): a plurality of proposed times at which other subscriber units have proposed to utilize the shared wireless communication resource (receive one or more PTIM messages from others wanting to utilize the radio resource to send this mobile station messages Col. 9 Ln 10-20); a first scheduled time at which the controller will shift from the sleep mode of operation to the active mode of operation (time to wake up); a second scheduled time at which the controller will cause the transceiver to receive data (time to receive Col. 7-8) as transmitted by a master unit; wherein the controller comprises an inherent scheduling means for using the plurality of proposed times to select the first and second scheduled times (When the station receives some or more PTIM messages indicating that other devices want send data to it, then the mobile station stays awake to receive the messages until it finishes receiving data and goes to a doze state therefore there's an inherent scheduling means that selects the first and second times based on the proposed times from other devices. Therefore, this teaching broadly suggests a scheduling means that can control the selecting of first scheduled time (when to wake up) and second scheduled time (when to receive data) based on

the plurality of proposed time of when other devices are using the shared resources Col. 9 ln 10 –22).

19. However, **vanBokhorst** does not specifically teach the first and second schedule times and that the master unit is an access point that sends the utilization times. In an analogous art, **Liu** teaches an access point sending a schedule of proposed times (para. 71, 78, 81-83) and a scheduling means to select the first time element of waking up and the second time element of receiving data based on the SIV frame which contains the proposed time of when other devices are using the resources (station may adjust its expected time for data reception and when to reenter sleep mode, para. 94, 99 and 100). Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to apply **vanBokhorst**'s teaching of synchronization scheme between a master and the slaves to **Liu**'s teaching of synchronization coordination between the access point and the subscriber units to improve system's synchronization. Furthermore, it is also advantageous to combine **vanBokhorst**'s teaching of the power savings and suggestions of a scheduler and Liu's scheduler of selecting the wakeup and receive time based on when others are proposing to utilize the network to avoid collision and thereby improves the system's quality of service.

20. Regarding **claim 24**, **van Bokhorst and Liu** teach the subscriber unit of claim 22, wherein **van Bokhorst** further teaches the scheduling means is further for causing transmission of the data to the access point at the second scheduled time when there is no proposed time (Col. 8 ln 46-60).

21. Regarding **claim 25**, **van Bokhorst and Liu** teach the subscriber unit of claim 24 wherein Liu further teaches the scheduling means is further selecting another scheduled time when an apparent conflict appears to exist with another subscriber unit at the second scheduled time ([94]).

22. Claims **6, 7, 11-13, 15, 24-25** are rejected under 35 U.S.C. 103(a) as being unpatentable over ***Liu et al*** (US Pub. No. 2004/0190467) in view of **Haddad** (US Pub. No. 2004/0013135).

23. Regarding **claim 6**, **Liu** teaches all the limitations in claim 1. However, Liu does not teach a step of reselecting a new reception time if the first selected time is not available. In an analogous art, **Haddad** teaches that the AP informs each wireless station of the allocation status via the beacon packet and additional time slots can be allocated for their retransmission (para. 39). Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to combine Liu's teaching of the time reception scheduling with **Haddad**'s teaching of retransmission opportunity for ensure the integrity of the data transmission and thus increases the quality of service.

24. Regarding **claim 7**, **Liu and Haddad** teach all the limitations in claim 6. However, they do not explicitly teach the step of receiving another beacon transmission from the access point that corresponds to times when other subscriber units are proposing to utilize the shared wireless communication resource; using the second information to select a new particular time to receive data from the access point using the shared wireless communication resource. Nonetheless, **Haddad** teaches that the

AP informs each wireless station of the allocation status via the beacon packet and additional time slots can be allocated for their retransmission (para. 39). Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to combine Liu's teaching of the time reception scheduling with **Haddad**'s teaching of allowing the station to reselect another transmission opportunity to make sure the transmission is successful and thus increases the quality of service.

25. Regarding **claim 11, 12, and 13**, **Liu** teaches all the limitations in claim 10. However, he fails to teach that identifying specific times comprises identifying a particular moment in a real-time sequence, which is a time slot for a particular event. In an analogous art, Haddad teaches that from the beacon packet the AP assigns time slots for the stations to do data transmission (para. 39). Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to combine Liu's teaching of the time reception scheduling with **Haddad**'s teaching of allowing the station to select a specific real-time time slot to give the station the flexibility of transmitting when necessary.

26. Regarding **claim 15**, **Liu** teaches all the limitations in claim 12. However, he fails to explicitly teach that the scheduling information identifying specific times even when none of the plurality of subscriber units have proposed to make a transmission. Nonetheless, it is typical for systems to also include default settings so that the uplink and downlink communications can be minimized.

Response to Arguments

Applicant's arguments filed 10/05/06 have been fully considered but they are not persuasive.

Applicant argues that "Liu never mentions anything about the subscriber units transmitting proposed scheduling times to the access point." The examiner respectfully disagrees. As addressed in the above rejection, the AP uses CC/RR protocols to poll and collect utilizations times from subscribers in order to construct a SIV, "schedule information vector", to be sent to the subscribers. Since the SIV is constructed based on polling and interactions with the subscribers, it broadly reads on as "utilization times proposed by the other subscribers", (para. 26, 28, 71, 78, 81-83).

Applicants also submit that the master station of van Bokhorst is not an access point, at least as that term is understood by one of ordinary skill in the art. As rejected above, Liu teaches the concept synchronization between the access point and the subscribers. Therefore, vanBokorst and Liu's combined teaching does have "an access point".

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung Lam whose telephone number is (571) 272-6497. The examiner can normally be reached on M - F 9 - 6 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lester Kincaid can be reached on (571) 272-7922. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DL

LESTER G. KINCAID
SUPERVISORY PRIMARY EXAMINER